Perspective on the Future of the US Natural Gas Storage Market

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FALCON GAS STORAGE COMPANY, INC.

- Independent, merchant owner, developer and operator of high develiverability, multi-cycle ("HDMC") storage capacity.
- Founded October 2000.
- Company focus: redevelop depleted oil/gas reservoirs in market areas (ERCOT, NERC, WSCC/RM) for HDMC service.
- HDMC capacity in service (Hill-Lake, Eastland Co., TX):
  - MSQ: 8,500,000 Dth (12 Bcf Total)
  - MDWQ: 150,000 → 300,000 Dth/d
  - MDIQ: 100,000 → 150,000 Dth/d
- Interconnects: TXU Lone Star "X" and "WA", EPG/TXU N. Texas Pipeline.
- Additional projects in N. Texas, New York and RM.
- Formed Greyhawk Gas Storage Co., LLC with subsidiary of Emera, Inc. in 2001 to develop HDMC storage in NE.

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Trends Impacting US Gas Storage

- Growth in GFEG → incremental load profile will be "spikier" at the margin.
- Domestic reserve replacement slowing . . .
- Growing Canadian imports → shifting "null points".
- Mismatch in incremental supply and demand volatility → increased price volatility at the margin.
- Tightness in midstream capacity → higher weather sensitivity.
- Daily balancing → deliverability and injection vs. working gas.
- EFM and similar technology → ability to match gas and power dispatch more closely (but can the reservoirs respond?).
- Consolidation of mid-stream asset ownership → lower cost of capital, but less customer choice (?)
- Lots of announcements, not many projects.

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Market Needs

- **Needs vary significantly within market segments.**
  - LDCs, Marketers, Pipelines, Power Gen, Producers
- **More withdrawal capacity needed for peak hours.**
  - Human needs, arbitrage, pipeline balancing, power dispatch.
- **More injection capacity needed for off-peak hours.**
  - Dispatch at a loss or shut down?
- **Proximity to market area.**
  - Balancing pressure swings vs. locational optionality.
- **Cost vs. Utilization** (HDMC reservoir vs. Salt).
  - What's optimal? For whom?
  - 4x – 6x in the market area offers optimum capacity for diverse needs (seasonal, arbitrage and balancing).

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Existing Barriers to Development

- **Market Apathy, Uncertainty:**
  - "It's worked so far."
  - Market's sense of urgency related to last season's weather.
  - Lack of GFEG interest (background, economy, "free swing").
  - Cost center vs. profit center mentality.
  - Contract terms (short vs. long, fixed vs. variable).
  - Shifting null points on the grid.
  - Regulatory uncertainty.
- **Constraints on new supply:**
  - Scarce, finite supply of suitable reservoirs.
  - Profit center vs. cost center mentality ("Show me the money").
  - Lack of risk capital.
  - Low asset turnover.
  - NIMBY political power.
- **Result**: Expansions vs. New Projects.

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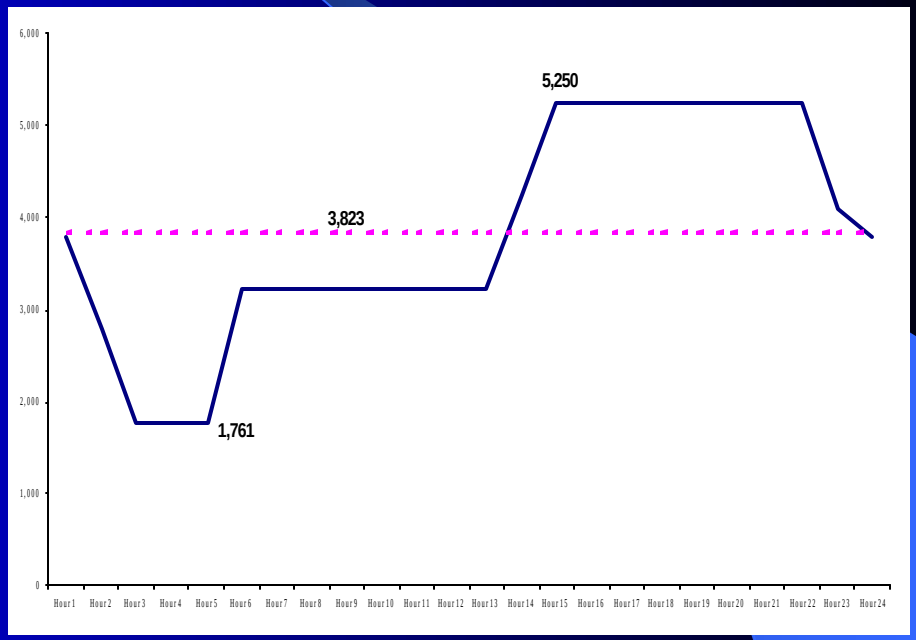
New GFEG Demand

What the incremental customer is asking for. . .

- Expected Load Profile: 5 x 16.
- 750 MW @ 7,000 heat rate = 5,250 Dth/hour.
- Base load supply @ 3,823 Dth/hour.
- Seeks intra-day (hourly) balancing.
- Pipeline unable to provide firm balancing – charging penalties for interruptible service.
- “How much do I need ??”
- “How much does that cost?”



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Capacity Math

Question: How much optionality desired?
(daily, monthly, seasonal)

MDIQ = (Hourly Baseload – Minimum Hourly Burn) x 24

MDWQ = (Max Hourly Burn – Hourly Baseload) x 24

MinSQ = Sum of injection (or withdrawal) over 24 hr period.

- Desired ratio of injection and withdrawal to working gas is extremely high.
- Customer sees little incentive to carry “extra” inventory.
- Fuel managers may have different incentives.

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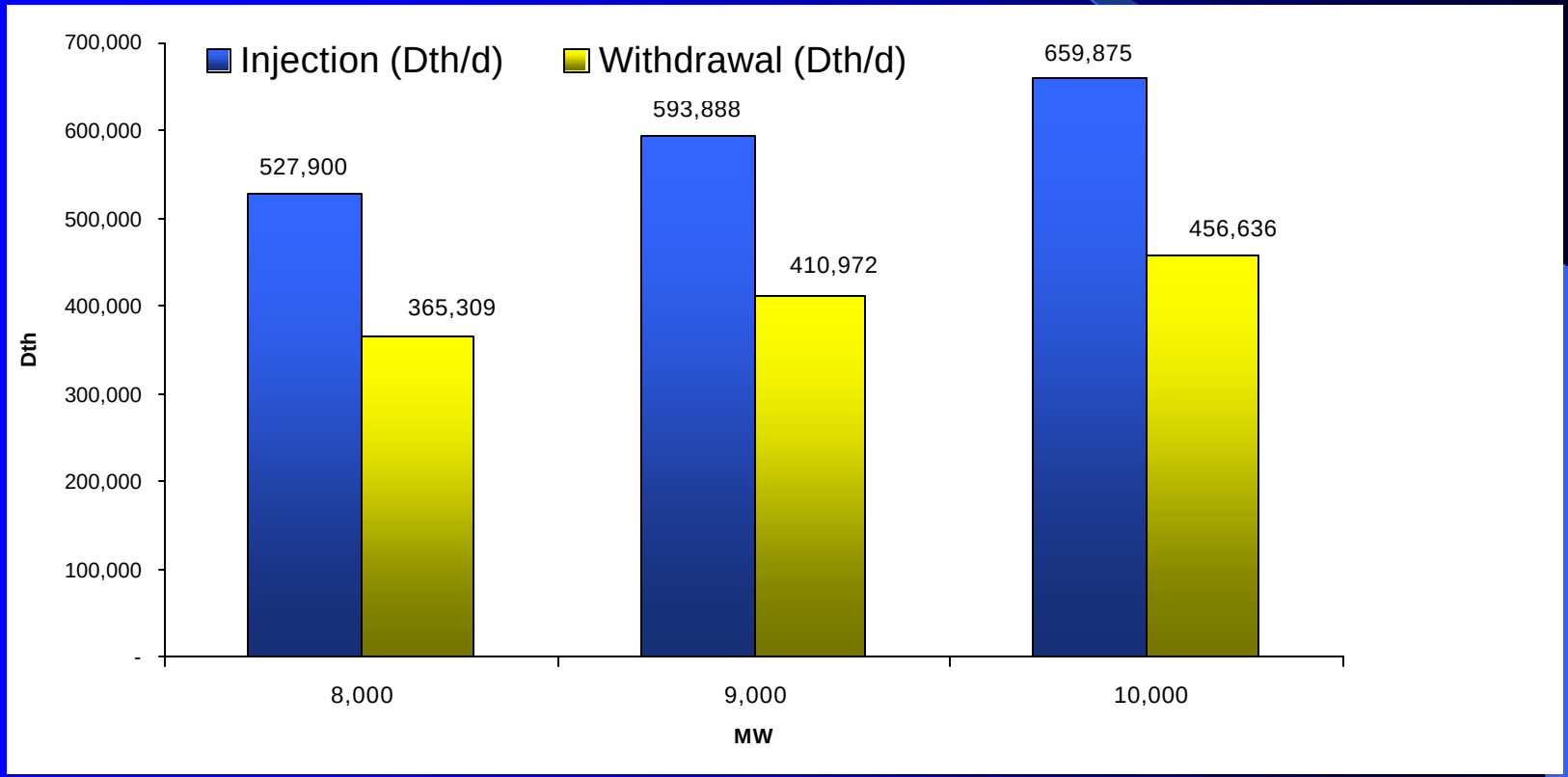
Example Market in Texas

8,000 - 10,000 Incremental MW Growth @ 7,000 Heat Rate



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How much does that cost?

- 9,000 new GFEG MWs @ 7,000 heat rate.
- Injection/withdrawal capacity required:
  - MDIQ: 600,000 Dth/d
  - MDWQ: 400,000 Dth/d
  - MSQ: ???
- @ $300 - 400/Dth/d = Capital Investment of $120 - 240 MM (does not include the cost of capital).
- Note: Assumes suitable reservoirs are available close to relevant pipelines exist.

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Summary

Conclusions:

- Latent demand for storage cycling capacity is growing.
- Latent demand is being masked by transient conditions.
- Uncertainty, lack of incentives, regulation and Mother Nature will restrain new development of injection and deliverability as long as demand remains latent.
- Required investment is very large and will be a surprise to many.

Open Questions:

- Supply and Demand *will* balance, but at what price?
- When does capital begin to flow into the storage segment and at what cost?
- How will the risks of high fixed costs be allocated among developers, operators and customers?
- Who has better ability to lower the risk/cost of capital?

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Predictions

- Expansion projects will supply majority of incremental capacity through 2005.
- New long-haul transport capacity will not solve the problem.
- Many new storage projects will be announced, very few will be built.
- Greater % of GFEG will effectively become peakers.
- GFEG capital providers will require LT FSS.
- More joint-ventures, sale/lease-back deals.

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